tributors to the test sample further comprise one or more instructions that cause the processing device to use a Monte Carlo sampling algorithm to generate the probability distribution.

17. The system of claim **12**, further comprising one or more instructions that cause the processing device to determine the number of contributors to the test sample as a number of contributors with the highest probability on the probability distribution.

18. The system of claim **12**, further comprising one or more instructions that cause the processing device to determine the number of contributors to the test sample as a range on the probability distribution within which the number of contributors is most likely to lie.

19. The system of claim **12**, wherein the one or more variables are selected from at least one of the following: a baseline peak height, drop out, stutter, and presence of one or more artifacts.

20. The system of claim **12**, further comprising one or more instructions that cause the processing device to:

determine an amount of DNA in the test sample; and

use the amount to generate the probability distribution.

21. The system of claim **12**, wherein the plurality of calibration samples include a plurality of biological samples comprising DNA material from the same person but at different levels of DNA concentration.

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